

REMARKS

Reconsideration of the outstanding Office Action dated May 4, 2001 is respectfully solicited.

By this Amendment claims 11 and 22, 25, 26, 33, 34, 40 and 41 have been cancelled.

The independent claims 21, 29 and 36 have been amended to characterize propellant powder as a mono-, di- and tri-basic powder; and the surface coating agents polyurethane and cellulose ester have been deleted. A marked up version of the amended claims is attached hereto.

The claims 23,24, 27, 31 32, 35 and 42, as well as 38 and 39 depend from the aforementioned pending independent claims.

Applicants respectfully traverse the rejections under 35 U.S.C. 112. Claim 16 has been amended to depend from Claim 42. Claims 27, 35 and 42 have been amended to delete "the two components"; the Examiner's assumptions being correct. The rejection of Claim 39 is now moot in view of amendment of Claim 36 to delete "nitro acid ester"; thus the United States Patent and Trademark Office's assumption is correct; but the claims are clear within the meaning of Section 112.

Applicants respectfully traverse the rejections based on U.S. Patent Nos. 5,682,009; 5,520,757 and 5,801,325. The aforementioned substances, in particular the surface-coating agent listed in the rejected independent claims, do not follow from the applied prior art descriptions. The novelty of these agents is therefore undisputed.

The U.S. Patent 5,682,009 relates to surface coating agents. However, the agents of this reference consist of other materials. The applicants' composition of surface coating agents, and the mono-, di- and tri-basic propellant bulk powders, does not follow from this reference.

Also, the independent claims are novel as compared to the cited reference U.S. 5,520,757 because this reference discloses a completely different method. The aforementioned reference deals with the production of a base material for the propellant powder and not with a surface treatment which influences the burning behavior. Applicants claim the use of nitroethylnitramines as surface coating agent for various powder recipes. These can be monobasic or multi-basic. The cited reference does not provide any suggestions for treating the surfaces of propellant powders.

U.S. 5,801,325 also deals only with the composition for a propellant powder as propellant, for which no plasticizing agent is claimed. In contrast, surface treatment agents are claimed in our independent method claims.

With this prior art, the propellant powder is provided with an energetic binder, to be sure, but as a crystalline component. In the application, applicants use a polymer for the surface coating, for example, which basically has nothing to do with an energetic binder. Thus, **“mixing” should not be equated with “surface-treating,”** because the prior art claims a homogeneous composition, which cannot be produced with applicants’ method. It is furthermore not applicants’ intention to produce the prior art homogeneous compositions. The aforementioned reference does not disclose a surface treatment. Moreover applicants do not claim powder recipes for a homogeneous propellant powder production.

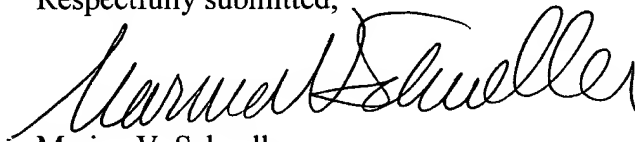
In applicants’ view, the Examiner’s statement and position concerning U.S. 5,801,325 do not appear accurate as the U.S. 5,801,325 contains only references to the propellant bonding. The Examiner’s statements with respect to the surface coating are therefore believed not to reflect the facts.

The U.S. 5,682,009 cannot suggest applicants' claims because this reference primarily deals with the production of ball powder, for which NC powder is dripped into a watery solution. In contrast, the surface coating according to applicants' invention is realized by spraying it on in the manner known per se.

Even though our application and the U.S. 5,682,009 provide a watery solution of the coating agent, the U.S. patent method pursues a different goal. That is to say, the coating for this reference is intended to generate an impregnation method, for which the impregnation can undertake only at an elevated temperature. According to applicants' invention, the coating is realized at a uniform spraying temperature.

Reconsideration and an early allowance are respectfully solicited.

Respectfully submitted,



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APPENDIX – MARKED UP VERSION OF CLAIM AMENDMENTS

--16. (AMENDED) The method of Claim [42] 10, wherein the energetic softener comprises at least one of [alkyl nitrate ethyl nitramine, nitric acid ester, bis (2, 2-dinitropropyl) acetal, bis (2,2,-dinitropropyl) formal, and dinitrodizaalkane] poly-3-nitratomethyl-3-methyl oxetane, polyglycidylnitrate, and glycidylazide polymer.

--21. (AMENDED) A method for producing a propellant powder for gun ammunition, comprising surface-treating a mono-, di-, and tri-basic propellant powder with at least one polymer selected from the group consisting of polyether, [polyurethane,] polyurea, polybutadiene, and polyamide [, and cellulose ester].--

--23. (AMENDED) The method of Claim [22] 21, wherein the propellant comprises at least one of nitrocellulose, a nitric acid ester, an alkyl nitrate ethyl nitramine, nitroguanidine, hexogen, octogen, 3-nitro-1,2,4-triazol-5-one, and hexanitrohexaazaisowurtzitane.—

--27. (AMENDED) The method of Claim 21, wherein the polymer and an energetic, monomer softener components are applied as a mixture [of the two components] or by a two-stage consecutive treatment.--

--29. (AMENDED) A method for producing a propellant powder for gun ammunition, comprising surface-treating a mono-, di-, and tri-basic propellant powder with at least one polymer selected from the group consisting of poly-3-nitratomethyl-3-methyl oxetane, [polyglycidylnitrate,] and glycidylazide polymer.—

--35. (AMENDED) The method of Claim 29, wherein the polymer and an energetic, monomer softener components are applied as a mixture [of the two components] or by a two-stage, consecutive treatment.--

--36. (AMENDED) A method for producing a propellant powder for gun ammunition, comprising surface-treating a mono-, di-, and tri-basic propellant powder with at least one of alkyl nitrate ethyl nitramine, [nitric acid ester;] bis(2,2-dinitropropyl) acetal, bis(2,2-dinitropropyl) formal, and dinitrodiazaalkane.--